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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,501	06/04/2001	Klaus Florian Schuegraf	MI22-1741	6564

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WELLS ST. JOHN P.S.  
601 W. FIRST  
SUITE 1300  
SPOKANE, WA 99201-3828

EXAMINER

ORTIZ, EDGARDO

ART UNIT PAPER NUMBER

2815

DATE MAILED: 04/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/875,501

Applicant(s)

Schuegraf Et.al.

Examiner

Edgardo Ortiz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jan 31, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 21, 22, and 29-31 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21, 22, and 29-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6 & 8 20) ☐ Other:

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### **DETAILED ACTION**

This Office Action is in response to an amendment filed January 31, 2002 on which Applicant amended claim 21, canceled claims 23-28 and added new claims 29-31.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21 and 29-31 are rejected under 35 U.S.C. § 102 (b) as being anticipated by Chen et.al.

(U.S. Patent No. 5,472,896). With regard to Claim 21, Chen teaches a polysilicon layer (14), a metal-silicide layer (16) against the layer of polysilicon, the metal-silicide layer comprising a Group III or a Group V dopant (As) and a silicon-dioxide-containing dopant barrier layer (22) against the metal silicide layer.

With regard to Claim 29, Chen teaches a silicon-dioxide-containing dopant barrier layer (22) that is elevationally above the metal-silicide layer (16).

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With regard to Claim 30, Chen teaches a metal-silicide layer (16) that comprises an elevationally uppermost surface relative to the polysilicon layer (14), and wherein a silicon-dioxide-containing dopant barrier layer (22) is against the uppermost surface.

With regard to Claim 31, Chen teaches a metal-silicide layer (16) that comprises an elevationally uppermost surface relative to a polysilicon layer (14), the uppermost surface having a width dimension, and wherein a silicon-dioxide-containing dopant barrier layer (22) is against substantially the entire width of the uppermost surface.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 22 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over Chen et.al. (U.S. Patent No. 5,472,896) in view of Ilg et al. (U.S. Patent No. 6,130,145). Chen, as stated supra, essentially discloses the claimed invention but fails to show, a concentration of dopants in the metal-silicide of at least  $1 \times 10^{18}$  ions/cubic cm. Ilg discloses an insitu doped metal policide which includes a polysilicon layer (230) and a metal-silicide layer (240) against the layer of polysilicon, wherein the metal-silicide layer comprises a Group III dopant (B) or a Group V

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dopant (P, As) and has a concentration of dopants of at least  $1 \times 10^{18}$  ions/cubic centimeter. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Chen to include a metal-silicide layer with a concentration of dopants of at least  $1 \times 10^{18}$  ions/ cubic cm in a gate structure, as clearly suggested by Ilg, in order to lower the resistance of the metal-silicide layer.

### *Response to Arguments*

3. Applicant's arguments with respect to claims 21, 22 and 29-31 have been considered but are moot in view of the new ground(s) of rejection. As for Applicant's request to the examiner for an initialed copy of the information disclosure statement filed on June 4, 2001, it is noted that an initialed copy of the information disclosure statement was sent to Applicant along with the office action mailed on November 8, 2001. The initialed copy includes the examiner's initials next to the reference (U.S. Patent No. 5,425,392) that was considered.

### *Conclusion*

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**


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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Edgardo Ortiz (Art Unit 2815), whose telephone number is (703) 308-6183 or by fax at (703) 308-7722. In case the Examiner can not be reached by a direct telephone call, you might call Supervisor Eddie Lee at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 receptionist whose telephone number is (703) 308-0956.

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4/3/02



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